

# Service Manual

## and Technical Guide

Telephone Equipment

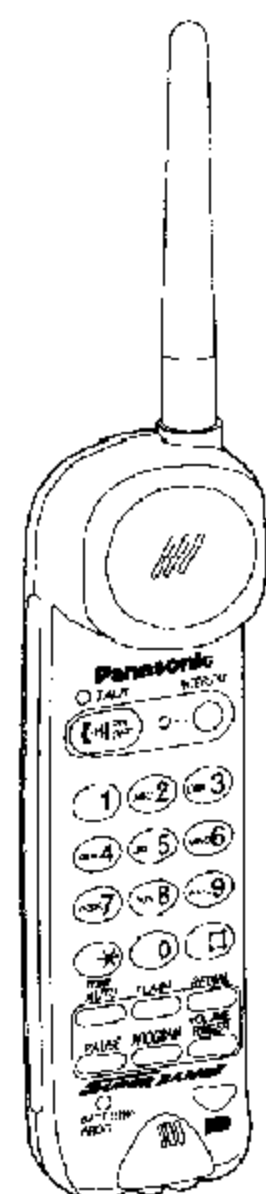


Cordless Phone

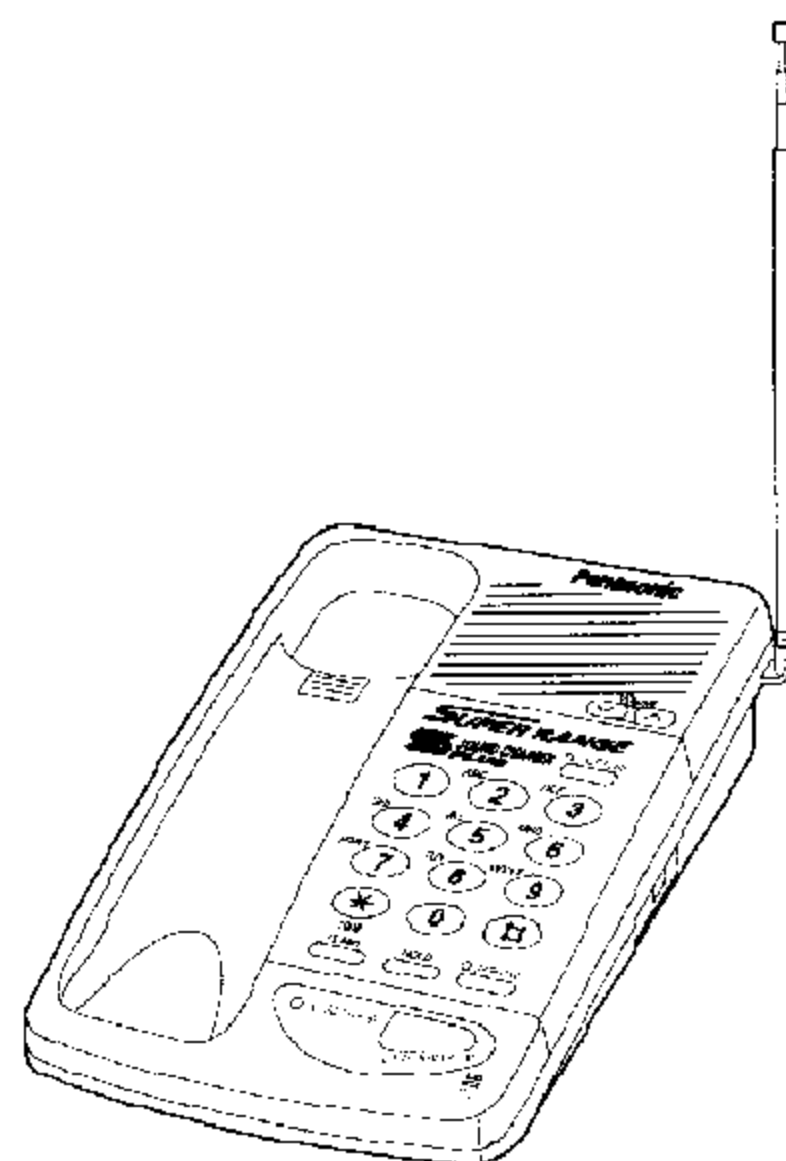
# KX-TC419BX

(KX-A91X)

(for Asia, Middle Near East and Other areas)



(KX-TC419BXR)



(KX-TC419BXH)



(KX-A91X)

SCHEMATIC DIAGRAM (KX-TC419BXH) \ ПРИНЦИПИАЛЬНАЯ СХЕМА (KX-TC419BXH)

SCHEMATIC DIAGRAM (KX-TC419BXR) \ ПРИНЦИПИАЛЬНАЯ СХЕМА (KX-TC419BXR)

CABINET AND ELECTRICAL PARTS LOCATION (KX-A91X) \ РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ (KX-A91X)

REPLACEMENT PARTS LIST (KX-TC419BXH) \ СПИСОК ЗАПАСНЫХ ЧАСТЕЙ (KX-TC419BXH)

REPLACEMENT PARTS LIST (KX-TC419BXR) \ СПИСОК ЗАПАСНЫХ ЧАСТЕЙ (KX-TC419BXR)

CABINET AND ELECTRICAL PARTS LOCATION (KX-T4046ALH) \ РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ (KX-T4046ALH)

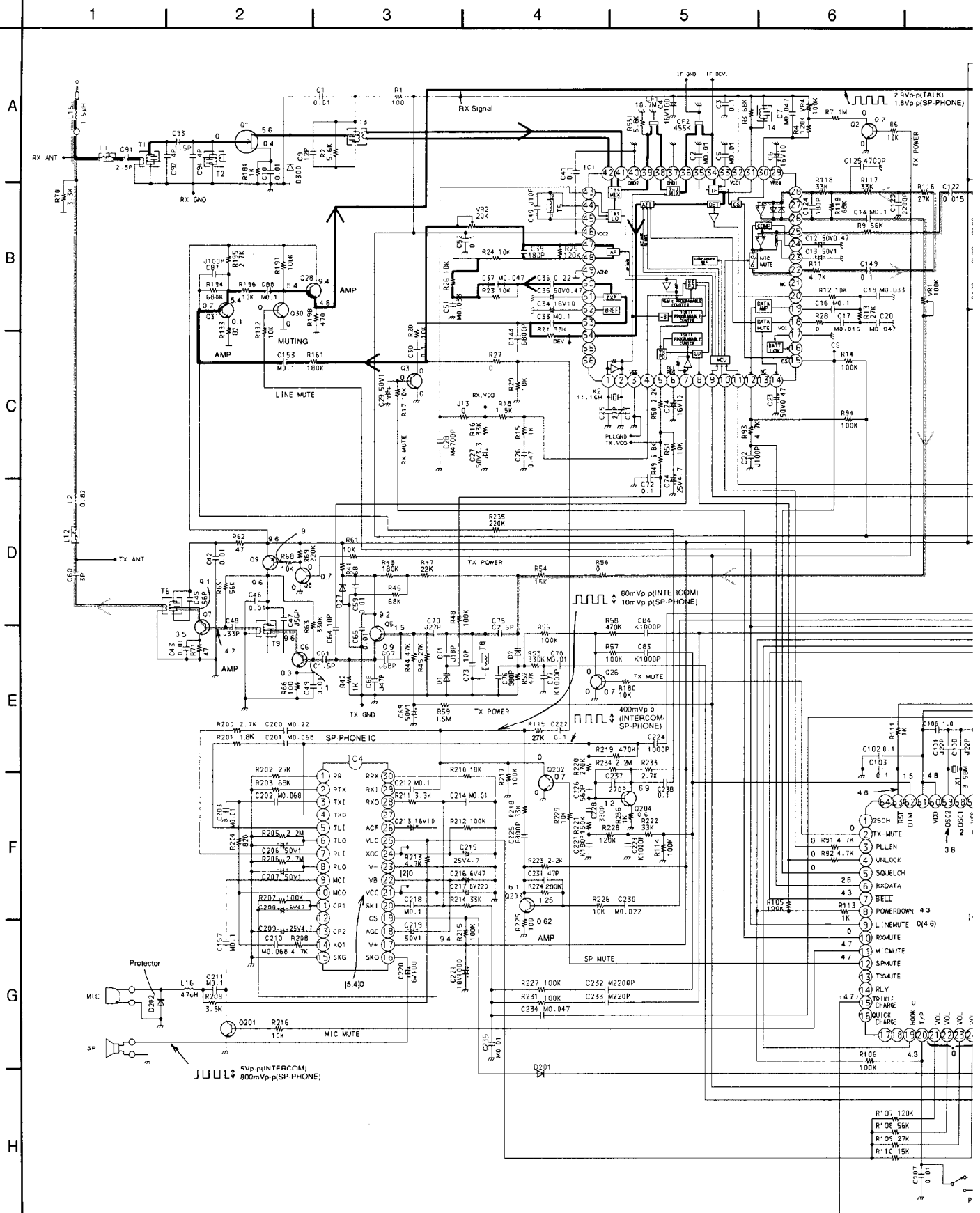
CABINET AND ELECTRICAL PARTS LOCATION (KX-T4046ALR) \ РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ (KX-T4046ALR)

# Panasonic

©1996 Kyushu Matsushita Electric Co., Ltd.

All rights reserved. Unauthorized copying and distribution is a violation of law.

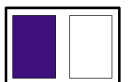
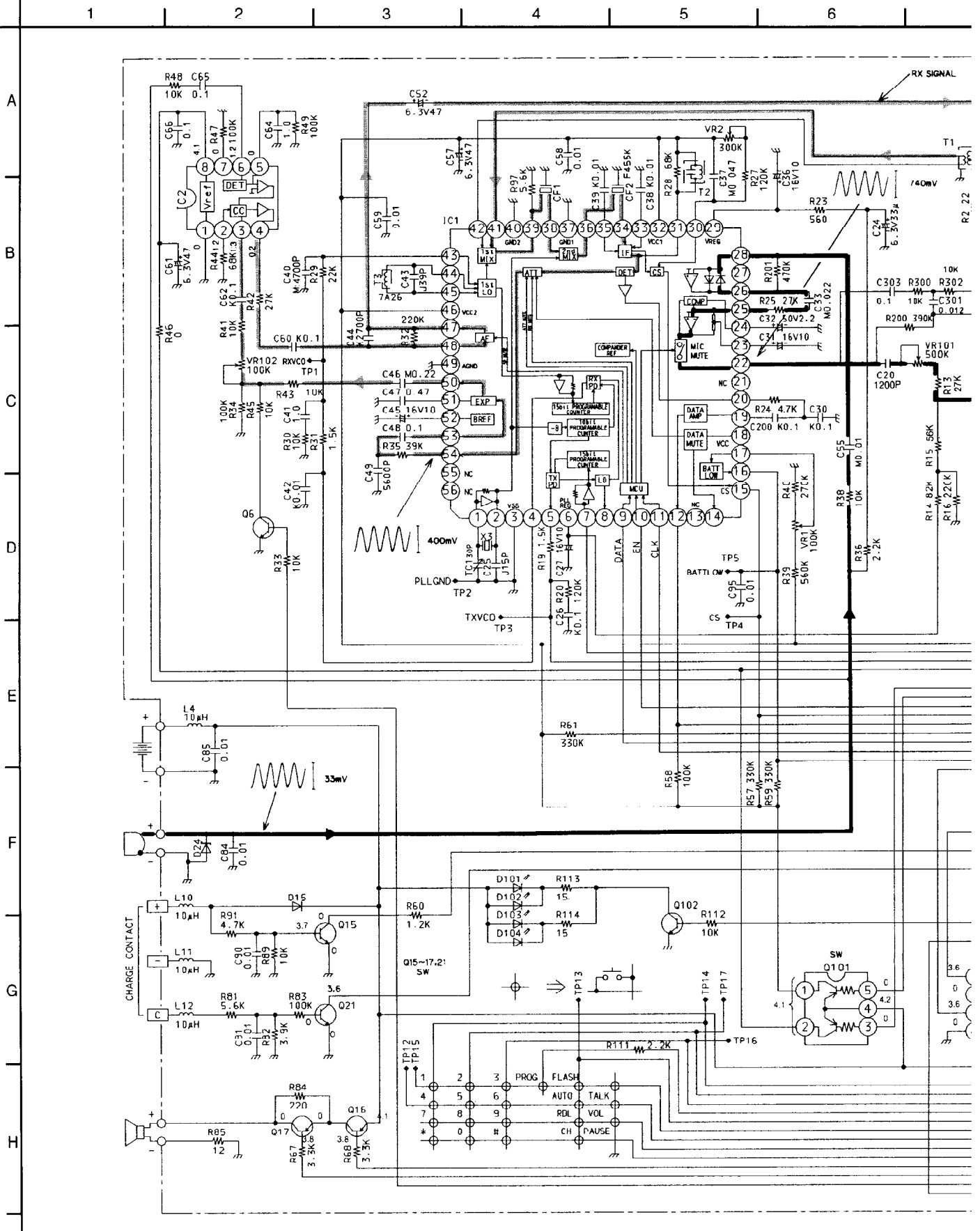
## SCHEMATIC DIAGRAM (KX-



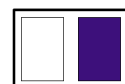
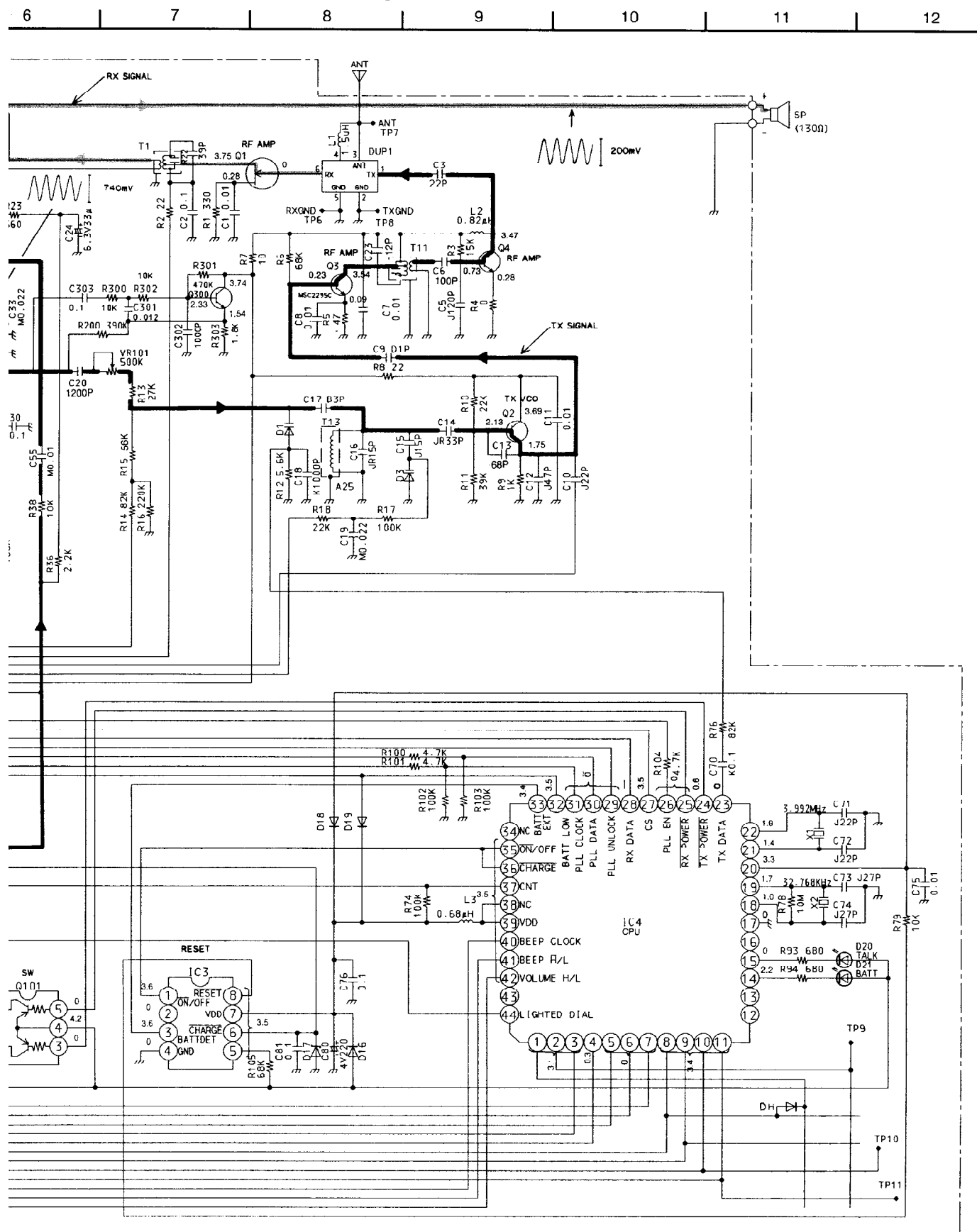
A horizontal number line with tick marks labeled 7, 8, 9, 10, 11, and 12.



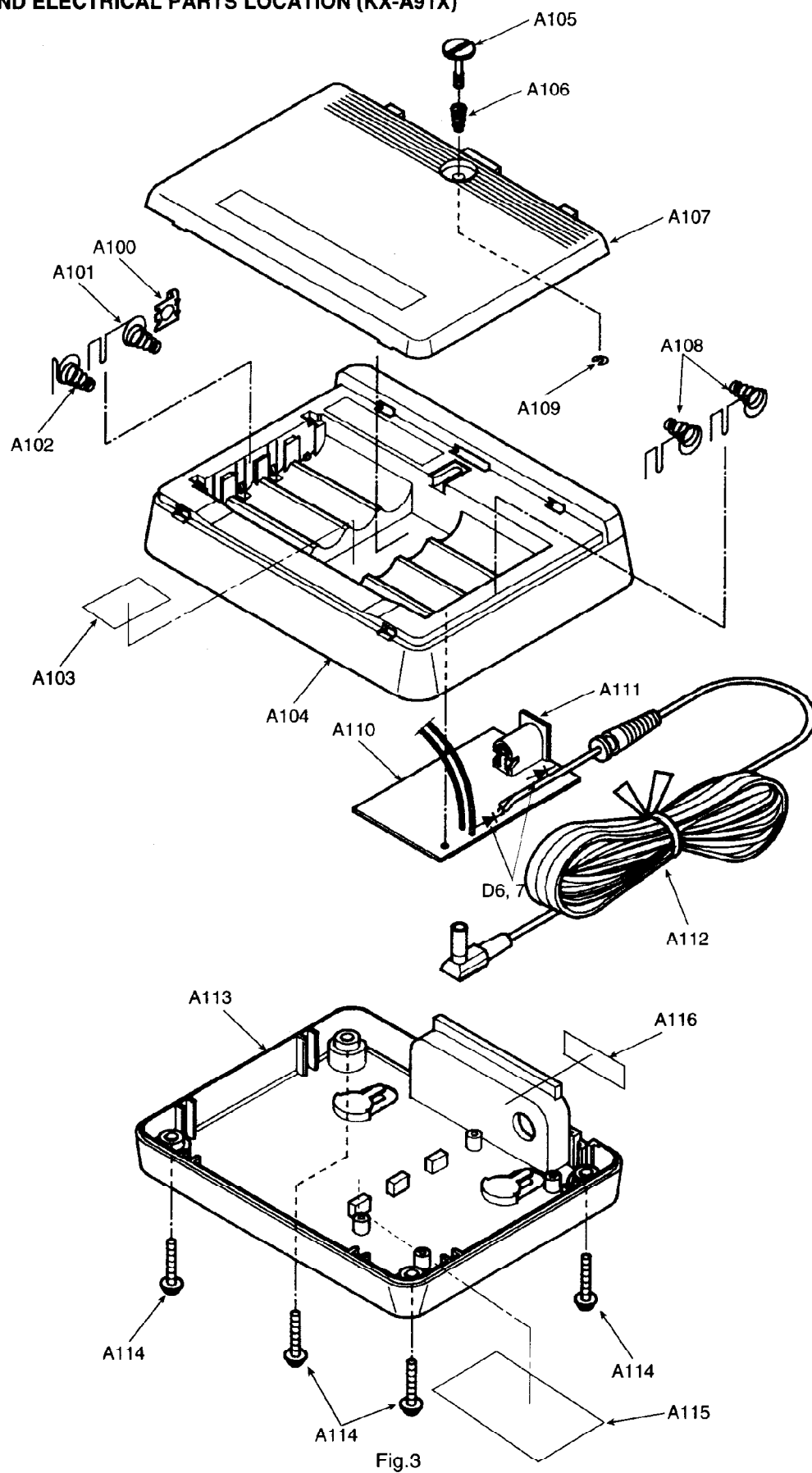
# SCHEMATIC DIAGRAM



# IC DIAGRAM (KX-TC419BXR)



■ CABINET AND ELECTRICAL PARTS LOCATION (KX-A91X)



## REPLACEMENT PARTS LIST

### Model KX-TC419BXH

#### Notes:

#### 1. RTL (Retention Time Limited)

The marking (RTL) indicates that the Retention Time is limited for this item.  
After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention.  
After the end of this period, the assembly will no longer be available.

#### 2. Important safety notice.

Components identified by the  $\Delta$  mark special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

#### 3. The S mark indicates service standard parts and may differ from production parts.

#### 4. RESISTORS & CAPACITORS

Unless otherwise specified.

All resistors are in ohms (  $\Omega$  ) K=1000 $\Omega$ , M=1000K $\Omega$

All capacitors are in MICRO FARADS (  $\mu$ F ) P=  $\mu$ F

\*Type & Wattage of Resistor

#### Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

#### Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W
------------	------------	---------	------	------	------

\*Type & Voltage of Capacitor

#### Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCB: Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG: Polyester
PQCUV:Chip	ECEA,ECSZ: Electrolytic
ECQMS:Mica	ECQP: Polypropylene

#### Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others		
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V	
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V	
2E:250V	2:200V	1V:35V	1C :16V	1J :63V	
2H:500V		0J:6.3V	1E,25:25V	2A :100V	

Ref. No.	Part No.	Part Name & Description	Pcs/Set
CABINET PARTS			
1	PQAS5P11Z	SPEAKER	1
2	PQJT10100Z	BATTERY TERMINAL	3
3	XEAPQK170D	ANTENNA	1
4	PQGT12688Z	NAME PLATE	1
5	PQKE46Y3	HANGER	1
6	PQYF10086G2	LOWER CABINET	1
7	PQBC10187Z2	BUTTON	1
8	PQKM10223M4	UPPER CABINET	1
9	PQBX10243Z2	BUTTON	1
10	PQBX10244Y2	BUTTON	1
11	PQBC10188Z1	BUTTON	1
12	PQQT11367Z	ADAPTOR LABEL	1

Ref. No.	Part No.	Part Name & Description	Pcs/Set
MAIN PRINTED CIRCUIT BOARD PARTS			
PCB1	PQWPTC419BXH	MAIN, P.C. BOARD ASSY (RTL)	1
(ICS)			
IC1	AN6185NFA	IC	1
IC4	PQVISC77655V	IC	1
IC5	MN150832KKAA	IC	1
(TRANSISTORS)			
Q 1	2SK543	TRANSISTOR(SI)	1
Q 2	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q 3	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q 5	2SC2295	TRANSISTOR(SI)	1
Q 6	PQVTMSC2295C	TRANSISTOR(SI)	1
Q 7	PQVTMSC2295C	TRANSISTOR(SI)	1
Q 8	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q 9	2SB1322	TRANSISTOR(SI)	1
Q10	2SD1991A	TRANSISTOR(SI)	1
Q11	2SD2136	TRANSISTOR(SI)	1
Q12	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q13	2SB1218A	TRANSISTOR(SI) [or 2SA1576]	1
Q14	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q16	2SC1740S	TRANSISTOR(SI)	1
		[or 2SC3311 or 2SC3330]	
Q19	2SC1740S	TRANSISTOR(SI)	1
		[or 2SC3311 or 2SC3330]	
Q22	2SA1776P	TRANSISTOR(SI) [or 2SA1625]	1
Q23	2SA1776P	TRANSISTOR(SI) [or 2SA1625]	1
Q24	2SC1740S	TRANSISTOR(SI)	1
		[or 2SC3311 or 2SC3330]	
Q25	PQVTKSD261CY	TRANSISTOR(SI) [or 2SC2120]	1
Q26	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q28	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q29	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q30	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q31	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q32	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q33	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q34	2SB1218A	TRANSISTOR(SI) [or 2SA1576]	1
Q35	PQVTFB1A4M	TRANSISTOR(SI)	1
Q201	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q202	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q203	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
Q204	2SD1819A	TRANSISTOR(SI) [or 2SC4081]	1
(DIODES)			
D 1	MA840BTAKU	DIODE(SI)	1
D 2	MA840ATAKU	DIODE(SI)	1
D 3	MA4062	DIODE(SI)	1
D 4	MA4100	DIODE(SI)	1
D 5	1SS120	DIODE(SI)	1
D 6	MA4047	DIODE(SI)	1
D 7	1SS120	DIODE(SI)	1
D 8	1SS120	DIODE(SI)	1
D 9	1SS120	DIODE(SI)	1
D10	1SS120	DIODE(SI)	1
D12	MA4300	DIODE(SI)	1
D13	MA4300	DIODE(SI)	1
D14	MA4300	DIODE(SI)	1
D15	1SS120	DIODE(SI)	1
D22	1SS120	DIODE(SI)	1
D24	MA4300	DIODE(SI)	1

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Ref. No.	Part No.	Part Name & Description	Pcs/Set
D27	MA4091	DIODE(SI)	S 1	SA1	PQVDDSS301L	(OTHERS) VARISTOR	△ 1
D40	PQVDS1ZB40F1	DIODE(SI)	1	SA2	PQVDDSA242M	VARISTOR	△ 1
D201	1GS120	DIODE(SI)	S 1	CT1	ECRLA030E53	TRIMMER CAPACITOR	S 1
D202	MA4300	DIODE(SI)	1	E1	PQJM122Z	MICROPHONE	1
D300	ISS314	DIODE(SI)	1	E2	PQMG10004Z	RUBBER, MIC COVER	1
DF	MA110	DIODE(SI)	1	E3	PQMC10226Z	SHIELD SHEET	1
DH	MA110	DIODE(SI)	1				
		(COILS AND TRNSFORMERS)				(RESISTOR)	
L1	PQLA7N3	COIL	1	R 1	ERJ3GEYJ101	100	1
L2	PQLQZKR82M	COIL	1	R 2	ERJ3GEYJ562	5.6k	1
L3	ELEPK100KA	COIL	S 1	R 3	ERJ3GEYJ683	68k	1
L6	PQLQZM1R5K	COIL	S 1	R 4	PQ4R10XJ124	120k	1
L8	PQLQZM330K	COIL	1	R 6	ERDS2TJ103	10k	1
L9	PQLQZM330K	COIL	1	R 7	PQ4R10XJ105	1M	1
L10	PQLQZM330K	COIL	1	R 9	ERJ3GEYJ563	56k	1
L11	PQLQZM1R0K	COIL	1	R11	PQ4R10XJ472	4.7k	1
L12	PQLA7N7	COIL	1	R12	ERJ3GEYJ103	10k	1
L15	PQLQZK1R5K	COIL	1	R13	ERJ3GEYJ273	27k	1
L16	PQLQZM470K	COIL	1	R14	ERJ3GEYJ104	100k	1
T1	PQLA7A9	COIL	1	R15	ERJ3GEYJ102	1k	1
T2	PQLA7A9	COIL	1	R16	ERJ3GEYJ333	33K	1
T3	PQLA7A7	COIL	S 1	R17	ERJ3GEYJ103	10k	1
T4	PQLI2B201	I.F. TRANSFORMER	1	R18	ERJ3GEYJ152	1.5k	1
T5	PQL04A1	COIL	1	R19	ERJ3GEY0R00	0Ω	1
T6	PQLA7A19	COIL	1	R20	ERJ3GEYJ103	10k	1
T8	PQLA7A27	COIL	1	R21	ERJ3GEYJ333	33k	1
T9	PQLA7A19	COIL	1	R23	ERJ3GEYJ103	10k	1
T10	PQLT8F11A	TRANSFORMER	△ 1	R24	ERJ3GEYJ103	10k	1
T11	PQLT8F11A	TRANSFORMER	△ 1	R25	ERJ3GEYJ124	120k	1
		(PHOTO COUPLERS)		R26	ERJ3GEYJ103	10k	1
PC3	PQVIPCB14K	PHOTO ELECTRIC TRANSDUCER	S △ 1	R27	ERJ3GEY0R00	0Ω	1
PC4	PQVITLP627	PHOTO ELECTRIC TRANSDUCER	S △ 1	R28	ERJ3GEY0R00	0Ω	1
PC6	PQVIPCB17CD	PHOTO ELECTRIC TRANSDUCER	S △ 1	R29	PQ4R10XJ103	10k	1
		(CONNECTOR)		R41	ERJ3GEYJ680	68	1
CN1	PQJP14A55Z	CONNECTOR, 14 PIN	1	R42	ERJ3GEYJ102	1k	1
		(JACK)		R43	ERJ3GEYJ184	180k	1
JJ1	PQJJ2HA2Z	JACK, TELEPHONE LINE, DC IN	△ 1	R44	ERJ3GEYJ473	47k	1
		(VARIABLE RESISTORS)		R45	ERJ3GEYJ273	27k	1
VR1	EVNDXAA03B15	VARIABLE RESISTOR, 100kΩ	1	R46	ERJ3GEYJ683	68k	1
VR2	EVNDXAA03B24	VARIABLE RESISTOR, 20kΩ	1	R47	ERJ3GEYJ223	22k	1
VR4	EVNDXAA03B15	VARIABLE RESISTOR, 100kΩ	1	R48	ERJ3GEYJ104	100k	1
		(CRYSTALS)		R49	ERJ3GEYJ682	6.8k	1
X1	PQVCJ3581N9Z	CRYSTAL OSCILLATOR	S 1	R50	PQ4R10XJ222	2.2k	1
X2	PQVCK1116N3Z	VARIABLE CAPACITOR	1	R51	ERJ3GEYJ103	10k	1
		(CERAMIC FILTERS)		R52	ERJ3GEYJ473	47k	1
CF1	PQVFSFE107MJ	CERAMIC FILTER	1	R53	ERJ3GEYJ334	330k	1
CF2	PQVFCFH455F1	CERAMIC FILTER	S 1	R54	ERJ3GEYJ153	15k	1
		(SWITCHES)		R55	ERJ3GEYJ104	100k	1
SW1	PQSS2A27W	SWITCH	1	R56	ERJ3GEY0R00	0Ω	1
SW2	PQSS3A17W	SWITCH	1	R57	ERJ3GEYJ104	100k	1
				R58	ERJ3GEYJ474	470k	1
				R59	ERJ3GEYJ155	1.5M	1
				R61	ERJ3GEYJ103	10k	1
				R62	ERJ3GEYJ470	47	1
				R63	ERJ3GEYJ334	330k	1
				R65	ERJ3GEYJ563	56k	1
				R66	ERJ3GEYJ101	100	1
				R68	ERJ3GEYJ103	10k	1
				R69	ERJ3GEYJ224	220k	1
				R70	ERJ3GEYJ332	3.3k	1
				R71	ERJ3GEYJ470	47	1
				R91	ERJ3GEYJ472	4.7k	1
				R92	ERJ3GEYJ472	4.7k	1
				R93	ERJ3GEYJ472	4.7k	1



Ref. No.	Part No.	Value	Pcs/Set	Ref. No.	Part No.	Value	Pcs/Set
R94	ERJ3GEYJ104	100k	1	R195	ERJ3GEYJ272	2.7k	1
R98	ERJ3GEYJ472	4.7k	1	R196	ERJ3GEYJ103	10k	1
R99	ERJ3GEYJ472	4.7k	1	R197	ERJ3GEYJ104	100k	1
R100	ERJ3GEYJ104	100k	1	R198	ERJ3GEYJ471	470	1
R101	ERJ3GEYJ683	68k	1	R199	ERJ3GEYJ101	100	1
R102	ERJ3GEYJ272	2.7k	1	R200	ERJ3GEYJ272	2.7k	1
R103	ERJ3GEYJ332	3.3k	1	R201	ERJ3GEYJ182	1.8k	1
R105	PQ4R18XJ104	100k	1	R202	ERJ3GEYJ273	27k	1
R106	ERJ3GEYJ104	100k	1	R203	ERJ3GEYJ683	68k	1
R107	ERJ3GEYJ124	120k	1	R204	ERJ3GEYJ821	820	1
R108	ERJ3GEYJ563	56k	1	R205	ERJ3GEYJ225	2.2M	1
R109	ERJ3GEYJ273	27k	1	R206	ERJ3GEYJ275	2.7M	1
R110	ERJ3GEYJ153	15k	1	R207	ERJ3GEYJ104	100k	1
R111	ERJ3GEYJ102	1k	1	R208	ERJ3GEYJ472	4.7k	1
R113	ERJ3GEYJ102	1k	1	R209	ERJ3GEYJ392	3.9k	1
R114	ERJ3GEYJ104	100k	1	R210	ERJ3GEYJ183	18k	1
R115	ERJ3GEYJ273	27k	1	R211	ERJ3GEYJ332	3.3k	1
R116	PQ4R10XJ273	27k	1	R212	ERJ3GEYJ104	100k	1
R117	ERJ3GEYJ333	33k	1	R213	ERJ3GEYJ472	4.7k	1
R118	ERJ3GEYJ333	33k	1	R214	ERJ3GEYJ333	33k	1
R119	ERJ3GEYJ683	68k	1	R215	ERJ3GEYJ104	100k	1
R121	ERJ3GEY0R00	0Ω	1	R216	ERJ3GEYJ103	10k	1
R122	ERJ3GEYJ183	18k	1	R217	ERJ3GEYJ104	100k	1
R123	ERJ3GEYJ102	1k	1	R218	ERJ3GEYJ333	33k	1
R124	ERJ3GEYJ334	330k	1	R219	ERJ3GEYJ474	470k	1
R126	ERJ3GEYJ682	6.8k	1	R220	ERJ3GEYJ274	270k	1
R127	ERJ3GEYJ822	8.2k	1	H221	ERJ3GEYJ154	150k	1
R128	ERJ3GEYJ821	820	1	R222	ERJ3GEYJ333	33k	1
R129	ERJ3GEYJ562	5.6k	1	R223	ERJ3GEYJ222	2.2k	1
R130	ERJ3GEYJ104	100k	1	R224	ERJ3GEYJ684	280k	1
R131	PQ4R10XJ102	1k	1	H225	ERJ3GEYJ101	100	1
R132	ERJ3GEYJ104	100k	1	R226	ERJ3GEYJ103	10k	1
R133	ERJ3GEYJ104	100k	1	R227	ERJ3GEYJ104	100k	1
R134	ERJ3GEYJ104	100k	1	R228	ERJ3GEYJ124	120k	1
R135	ERJ3GEYJ472	4.7k	1	R229	ERJ3GEYJ103	10k	1
R137	ERJ3GEYJ104	100k	1	R230	PQ4R10XJ331	330	1
R138	ERJ3GEYJ104	100k	1	R231	ERJ3GEYJ104	100k	1
R139	ERJ3GEYJ823	82k	1	R232	PQ4R10XJ102	1k	1
R140	ERJ3GEYJ103	10k	1	R233	ERJ3GEYJ272	2.7k	1
R141	ERJ3GEYJ103	10k	1	R234	ERJ3GEYJ225	2.2M	1
R142	ERDS2TJ102	1k	1	R235	ERJ3GEYJ224	220k	1
R143	ERJ3GEYJ103	10k	1	R236	PQ4R10XJ102	1k	1
R144	ERDS2TJ101	100	1	R237	ERDS2TJ103	10k	1
R145	ERDS2TJ332	3.3k	1	R300	ERDS2TJ473	47k	1
R147	ERJ3GEYJ473	47k	1	R301	ERDS2TJ104	100k	1
R151	ERDS2TJ471	470	1	R305	ERDS2TJ472	4.7k	1
R152	ERDS2TJ472	4.7k	1	R307	PQ4R10XJ223	22k	1
R153	ERDS2TJ181	180	1	R308	PQ4R10XJ683	68k	1
R154	ERDS2TJ103	10k	1	R309	ERDS2TJ682	6.8k	1
R156	ERJ3GEYJ472	4.7k	1	R310	ERDS2TJ682	6.8k	1
R161	ERJ3GEYJ184	180k	1	R311	PQ4R10XJ331	330	1
R170	ERJ3GEYJ473	47k	1	R312	PQ4R10XJ152	1.5k	1
R171	ERJ3GEYJ153	15k	1	R313	PQ4R10XJ103	10k	1
R172	ERJ3GEYJ473	47k	1	R315	PQ4R10XJ102	1k	1
R173	ERJ3GEYJ224	220k	1	R316	PQ4R10XJ151	150	1
R180	ERJ3GEYJ103	10k	1	R317	ERDS1TJ330	33	1
R182	ERJ3GEYJ103	10k	1	R318	ERDS1TJ390	39	1
R183	ERJ3GEY0R00	0Ω	1	R319	PQ4R10XJ332	3.3k	1
R184	ERJ3GEYJ102	1k	1	R331	PQ4R10XJ220	22	1
R186	ERJ3GEYJ122	1.2k	1	R551	ERJ3GEYJ562	5.6k	1
R187	ERJ3GEYJ334	330k	1	J12,	ERJ3GEY0R00	0Ω	6
R189	ERJ3GEYJ221	220	1	J78,79			
R190	ERJ3GEYJ223	22k	1	J90-92			
R192	ERJ3GEYJ103	10k	1	J13	ERDS2TJ223	22K	1
R193	ERJ3GEYJ820	82	1				
R194	ERJ3GEYJ684	680k	1				

Ref. No.	Part No.	Value	Pcs/Set
		(CAPACITORS)	
C 1	ECUV1H103KBV	0.01	S 1
C 2	PQCUV1H103KB	0.01	S 1
C 3	ECUV1E104ZFV	0.1	1
C 4	ECEA1CK101	100	S 1
C 5	PQCUV1H103KB	0.01	S 1
C 6	ECEA1CKS100	10	S 1
C 7	ECUV1H473MDV	0.047	S 1
C 9	ECUV1H120JCV	12p	1
C10	ECUV1H103KBV	0.01	S 1
C12	ECEA1HKS47	0.47	S 1
C13	ECEA1HKS010	1	S 1
C14	PQCUV1E104MD	0.1	S 1
C16	PQCUV1E104MD	0.1	1
C17	PQCUV1H153KB	0.015	S 1
C19	PQCUV1H333JC	0.033	1
C20	PQCUV1E473MD	0.047	1
C22	PQCUV1H101JC	100p	1
C23	ECEA1HKS47	0.47	S 1
C24	ECEA1CKS100	10	S 1
C25	ECUV1H270JCV	27p	1
C26	PQCUV1C474ZF	0.47	S 1
C27	ECEA1HKS3R3	3.3	S 1
C28	ECUV1H472KBV	0.0047	S 1
C29	ECEA1HKS010	1	S 1
C30	PQCUV1E104MD	0.1	S 1
C33	PQCUV1E104MD	0.1	S 1
C34	ECEA1CKS100	10	S 1
C35	ECEA1HKS47	0.47	S 1
C36	PQCUV1C224ZF	0.22	1
C37	ECUV1H473MDV	0.047	S 1
C39	ECUV1H181JCV	180p	1
C40	PQCUV1H100DC	10p	1
C41	ECUV1E104ZFV	0.1	1
C42	ECUV1H103KBV	0.01	S 1
C43	ECUV1H103KBV	0.01	1
C45	ECUV1H560JCV	56p	1
C46	PQCUV1H103KB	0.01	S 1
C47	PQCUV1H560JC	56p	1
C48	PQCUV1H330JC	33p	1
C49	PQCUV1H103KB	0.01	S 1
C51	PQCUV1H333JC	0.033	S 1
C52	PQCUV1E104MD	0.1	S 1
C59	ECUV1H103KBV	0.01	S 1
C60	ECUV1H030CCV	3p	1
C61	PQCUV1H1R5CC	1.5p	1
C64	PQCUV1H100DC	10p	1
C65	ECUV1H103KBV	0.01	S 1
C66	PQCUV1H470JC	47p	1
C67	PQCUV1H680JC	68p	1
C69	ECEA1HKS010	1	S 1
C70	PQCUV1H270JC	27p	1
C71	PQCUV1H180JC	18p	1
C72	PQCUV1E104MD	0.1	S 1
C73	PQCUV1H100DC	10p	1
C74	ECEA1HKS47	4.7	S 1
C75	PQCUV1H2R5C	2.5p	1
C76	ECUV1H681JCV	380p	1
C77	PQCUV1H102J	0.001	S 1
C78	ECUV1H103KBV	0.01	1
C83	PQCUV1H102J	0.001	S 1
C84	ECUV1H102KBV	0.001	1
C87	PQCUV1H101JC	100p	1
C88	PQCUV1E104MD	0.1	S 1
C91	ECUV1H2R5CCV	2.5p	1
C92	ECUV1H040CCV	4p	1

Ref. No.	Part No.	Value	Pcs/Set
C93	ECUV1H1R5CCV	1.5p	1
C94	ECUV1H040CCV	4p	1
C100	ECUV1H220JCV	22p	1
C101	ECUV1H220JCV	22p	1
C102	ECUV1E104ZFV	0.1	1
C103	ECUV1E104ZFV	0.1	1
C105	ECUV1H101JCV	100p	1
C106	PQCUV1C105ZF	1	1
C107	PQCUV1H103KB	0.01	S 1
C110	ECEA1CKS100	10	S 1
C111	ECUV1H101JCV	100p	1
C112	PQCUV1E104MD	0.1	S 1
C113	ECEA1CKS100	10	S 1
C116	PQCUV1H222KB	0.0022	1
C118	ECEA1HKS010	1	S 1
C119	ECEA1AKS330	33	S 1
C120	ECEA1HKS010	1	S 1
C122	PQCUV1H153KB	0.015	S 1
C123	ECUV1H222KBV	0.0022	S 1
C124	ECUV1H181JCV	180p	1
C125	PQCUV1H472KB	0.0047	1
C130	ECEA0JU102	1000	1
C131	PQCUV1C224ZF	0.22	1
C133	ECEA0JU102	1000	1
C134	ECEA1CU221	220	1
C135	ECEA1CK101	100	S 1
C136	ECUV1H103KBV	0.01	1
C137	PQCUV1E104MD	0.1	S 1
C138	PQCUV1E104MD	0.1	S 1
C139	PQCUV1E104MD	0.1	S 1
C140	ECEA1CK101	100	S 1
C144	PQCUV1H682KB	0.0068	1
C149	PQCUV1E104MD	0.1	S 1
C150	ECUV1H102KBV	0.001	1
C151	ECUV1H222KBV	0.0022	1
C152	ECEA1CKS100	10	S 1
C153	PQCUV1E104MD	0.1	S 1
C157	PQCUV1E104MD	0.1	S 1
C158	ECUV1H101JCV	100P	1
C159	PQCUV1E104MD	0.1	S 1
C170	PQCUV1E104MD	0.1	S 1
C200	PQCUV1C224ZF	0.22	1
C201	ECUV1H683ZFV	0.068	S 1
C202	PQCUV1C683MD	0.068	1
C203	PQCUV1H103KB	0.01	S 1
C206	ECEA1HKS010	1	S 1
C207	ECEA1HKS010	1	S 1
C208	ECEA1CKS470	47	S 1
C209	ECEA1HKS47	4.7	S 1
C210	PQCUV1C683MD	0.068	1
C211	PQCUV1E104MD	0.1	S 1
C212	ECUV1E104ZFV	0.1	S 1
C213	ECEA1CKS100	10	S 1
C214	PQCUV1H103KB	0.01	S 1
C215	ECEA1HKS47	4.7	S 1
C216	ECEA1CKS470	47	S 1
C217	ECEA0JK221	220	1
C218	PQCUV1E104MD	0.1	S 1
C219	ECEA1HKS010	1	S 1
C220	ECEA1CK101	100	S 1
C221	ECEA1AU102	1000	1
C222	PQCUV1E104MD	0.1	S 1
C224	PQCUV1H102J	0.001	1
C225	PQCUV1H682KB	0.0068	1
C226	PQCUV1H561JC	560p	S 1
C227	PQCUV1H181JC	180p	1

Ref. No.	Part No.	Part Name & Description	Pos/Set
C228	ECUV1H331JCV	330p	1
C229	PQCUV1H102J	0.001	S 1
C230	PQCUV1H223KB	0.022	S 1
C231	PQCUV1H470JC	47p	1
C232	PQCUV1H222KB	0.0022	1
C233	PQCUV1H221JC	220p	1
C234	ECUV1H473MDV	0.047	S 1
C235	ECUV1H103KBV	0.01	1
C237	ECUV1H271JCV	270p	1
C238	PQCUV1E104MD	0.1	S 1
C301	ECQE2224KF	0.22	1
C302	ECEA1CK101	100	S 1
C303	PQCUV1H103KB	0.01	S 1
C304	ECEA1CKS100	10	S 1
C305	PQCUV1E104MD	0.1	S 1
C306	ECEA1HKS010	1	S 1
C307	PQCUV1H223KB	0.022	S 1
C308	ECEA1HKS3R3	3.3	S 1
C309	ECEA1HU220	22	S 1
C310	ECEA1HKS010	1	1
C311	PQCUV1H103KB	0.01	S 1
C312	PQCUV1H102J	0.001	S 1
C313	ECKD2H681KB	680p	S 1
C314	ECKD2H681KB	680p	S 1
OPERATION PRINTED CIRCUIT BOARD PARTS			
PCB2	PQWP24046ALH	OPERATION, P.C.BOARD ASS'Y (RTL)	1
CN2	PQJS14A36Z	(CONNECTOR) CONNECTOR, 14 PIN	1
LED5	LNJ322GKGAH	(LEDS) LED	1
LED7	LN222RPH	LED	1
S3	EVQQJJ05Q	(SWITCHES) SWITCH	S 1
S4	EVQQJJ05Q	SWITCH	S 1
S5	EVQQJJ05Q	SWITCH	S 1
S6	EVQQJJ05Q	SWITCH	S 1
S7	EVQQJJ05Q	SWITCH	S 1
S8	EVQQJJ05Q	SWITCH	S 1
S9	EVQQJJ05Q	SWITCH	S 1
S10	EVQQJJ05Q	SWITCH	S 1
S11	EVQQJJ05Q	SWITCH	S 1
S12	EVQQJJ05Q	SWITCH	S 1
S13	EVQQJJ05Q	SWITCH	S 1
S14	EVQQJJ05Q	SWITCH	S 1
S15	EVQQJJ05Q	SWITCH	S 1
S16	EVQQJJ05Q	SWITCH	S 1
S17	EVQQJJ05Q	SWITCH	S 1
S18	EVQQJJ05Q	SWITCH	S 1
S19	EVQQJJ05Q	SWITCH	S 1
S20	EVQQJJ05Q	SWITCH	S 1
S21	EVQQJJ05Q	SWITCH	S 1

# REPLACEMENT PARTS LIST

## Model KX-TC419BXR

### Notes:

1. RTL (Retention Time Limited)  
The marking (RTL) indicates that the Retention Time is limited for this item.  
After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention.  
After the end of this period, the assembly will no longer be available.
2. Important safety notice.  
Components identified by the  $\Delta$  mark special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS  
Unless otherwise specified.  
All resistors are in ohms (  $\Omega$  ) K=1000 $\Omega$ , M=1000K $\Omega$   
All capacitors are in MICRO FARADS (  $\mu$ F ) P=  $\mu$ F  
\*Type & Wattage of Resistor

### Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

### Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W
------------	------------	---------	------	------	------

### \*Type & Voltage of Capacitor

### Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyester
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

### Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others		
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V	
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V	
2E:250V	2:200V	1V:35V	1C :16V	1J :63V	
2H:500V		0J:6.3V	1E,25:25V	2A :100V	

Ref. No.	Part No.	Part Name & Description	Pcs
CABINET PARTS			
100	PQKM10230J3	FRONT CABINET	1
101	PQKF10155Z2	CABINET COVER	1
102	PQSA10054Z	ANTENNA	1
103	PQAX3P16Z	SPEAKER	1
104	PQSX10029E	12 KEYPAD	1
105	PQKK10061Z2	BATTERY COVER	1
106	PQXA36ASVC	RECHARGEABLE BATTERY	1
107	PQSX10029Z	12 KEY SWITCH	1
108	PJHE5065Z	SCREW	2
109	PQGT12687Z	NAME PLATE	1
110	PQHE10070Z	MIC SPONGE	1
111	PQHE10084Z	FOAM PAD	1

Ref. No.	Part No.	Part Name & Description	Pcs/Set
MAIN P.C.BOARD PARTS			
PCB100	PQWPTC419BXR	MAIN, P.C.BOARD ASS'Y (RTL)	1
IC1	AN6185NFA	(ICS) IC	1
IC2	AN6183SAE1	IC	1
IC3	PQVISC78184D	IC	1
IC4	PQVI0006G515	IC	1
Q 1	2SK543	(TRANSISTORS) TRANSISTOR(SI)	1
Q 2	2SC2295	TRANSISTOR(SI)	1
Q 3	PQVTMSC2295C	TRANSISTOR(SI)	1
Q 4	2SC3356R24	TRANSISTOR(SI)	1
Q 6	2SD1819A	TRANSISTOR(SI) [or 2SC4155]	1
Q15	2SD1819A	TRANSISTOR(SI) [or 2SC4155]	1
Q16	2SB709A	TRANSISTOR(SI) [or 2SB709 or 2SA1162]	1
Q17	2SB709A	TRANSISTOR(SI) [or 2SB709 or 2SA1162]	1
Q21	2SD1819A	TRANSISTOR(SI) [or 2SC4155]	1
Q102	2SD1819A	TRANSISTOR(SI) [or 2SC4155]	1
Q101	XN1116	TRANSISTOR(SI)	1
Q300	2SD1819A	TRANSISTOR(SI) [or 2SC4155]	1
D 1	MA840ATAKU	(DIODES) DIODE(SI)	1
D 3	PQVD1SV145	DIODE(SI)	S 1
D15	1SS120	DIODE(SI)	S 1
D16	MA700A	DIODE(SI)	S 1
D17	MA4068	DIODE(SI)	S 1
D18	1SS120	DIODE(SI)	S 1
D19	MA110	DIODE(SI)	1
D20	LNJ330GKGAC	LED	1
D21	LNJ230RKAC	LED	1
D23	LNJ330GKGAC	LED	1
D24	MA4068	DIODE(SI)	S 1
D101	LN363GPPKU	LED	1
D102	LN363GPPKU	LED	1
D103	LN363GPPKU	LED	1
D104	LN363GPPKU	LED	1
DH	MA110	DIODE(SI)	1
VR1	EVNDXAA03B15	(VARIABLE RESISTORS) VARIABLE RESISTOR, 100k $\Omega$	1
VR2	EVNDXAA03B35	VARIABLE RESISTOR, 300k $\Omega$	1
VR101	EVNDXAA03B55	VARIABLE RESISTOR, 500k $\Omega$	1
VR102	EVNDXAA03B15	VARIABLE RESISTOR, 100k $\Omega$	1
X1	PQVCJ3992N9Z	(CRYSTALS) CRYSTAL OSCILLATOR	1
X2	PQVCL3276N9Z	CRYSTAL OSCILLATOR	1
X3	PQVCJ10240C5	CRYSTAL OSCILLATOR	1
L1	PQLQZK1R5K	(COILS AND TRANSFORMERS) COIL	1
L2	PQLQZMR82K	COIL	S 1
L3	ELJFAR68M	COIL	S 1
L4	PQLQZM100K	COIL	S 1

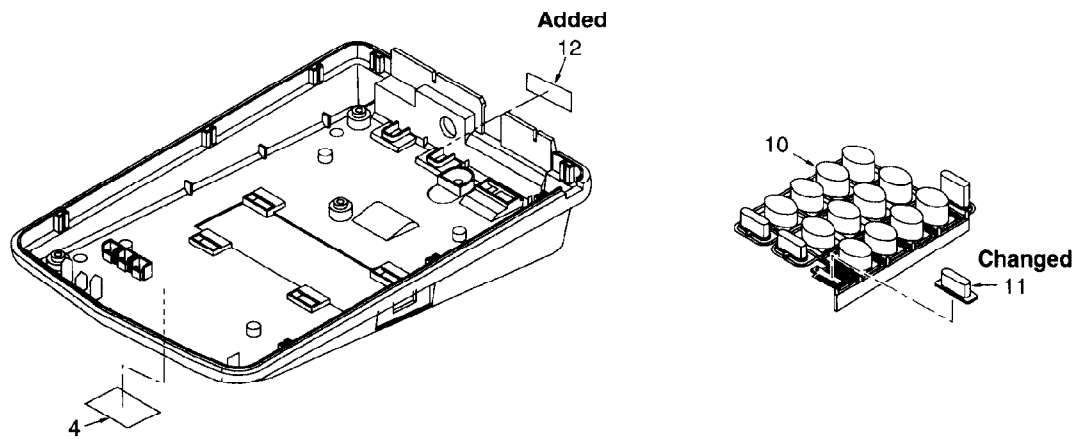
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Ref. No.	Part No.	Value	Pcs/Set
L10	PQLQZM100K	COIL	S 1	R42	ERJ3GEYJ273	27k	1
L11	PQLQZM100K	COIL	S 1	R43	ERJ3GEYJ103	10k	1
L12	PQLQZM100K	COIL	S 1	R44	ERJ3GEYJ683	68k	1
T1	PQLA7A9	COIL	1	R45	ERJ3GEYJ103	10k	1
T2	PQLI2B201	I.F. TRANSFORMER	1	R46	ERJ3GEY0R00	0Ω	1
T3	PQL04V3	COIL	1	R47	ERJ3GEYJ104	100k	1
T11	PQLA7A7	COIL	1	R48	ERJ3GEYJ103	10k	1
T13	PQL04V2	COIL	1	R49	ERJ3GEYJ104	100k	1
		(CERAMIC FILTERS)		R57	ERJ3GEYJ334	330k	1
CF1	RVFSFE107MSR	CERAMIC FILTER	S 1	R58	ERJ3GEYJ104	100k	1
CF2	PQVFCFH455F1	CERAMIC FILTER	S 1	R59	ERJ3GEYJ334	330k	1
		(OTHERS)		R60	ERJ3GEYJ122	1.2k	1
CN1	PQJP2D13Z	CONNECTOR, 2 PIN	1	R61	ERJ3GEYJ334	330k	1
TC1	ECRLA030E53	TRIMMER CAPACITOR	S 1	R67	ERJ3GEYJ332	3.3k	1
DUP1	ELB4Z010	COIL	1	R68	ERJ3GEYJ332	3.3k	1
E100	PQEFBQM111G1	BUZZER	S 1	R74	ERJ3GEYJ104	100k	1
E101	PQNW10011Z	FELT WASHER	1	R76	ERJ3GEYJ823	82k	1
E102	PQJM124X	MICROPHONE	1	R79	ERJ3GEYJ103	10k	1
E103	PQHR10269Z	MIC HOLDER	1	R81	ERJ3GEYJ562	5.6k	1
E104	PQJT10101Z	BATTERY TERMINAL	1	R82	ERJ3GEYJ392	3.9k	1
E105	PQJT10102Z	BATTERY TERMINAL	2	R83	ERJ3GEYJ104	100k	1
E106	PQMC10226Z	SHEILD SHHET	1	R84	ERJ3GEYJ221	220	1
		(RESISTORS)		R85	ERJ3GEYJ120	12	1
R 1	ERJ3GEYJ331	330	1	R89	ERJ3GEYJ103	10k	1
R 2	ERJ3GEYJ220	22	1	R91	ERJ3GEYJ472	4.7k	1
R 3	ERJ3GEYJ153	15k	1	R92	ERJ3GEYJ681	680	1
R 4	ERJ3GEY0R00	0Ω	1	R93	ERJ3GEYJ681	680	1
R 5	ERJ3GEYJ390	39	1	R94	ERJ3GEYJ681	680	1
R 6	ERJ3GEYJ683	68k	1	R100	ERJ3GEYJ472	4.7k	1
R 7	ERJ3GEYJ100	10	1	R101	ERJ3GEYJ472	4.7k	1
R 8	ERJ3GEYJ220	22	1	R102	ERJ3GEYJ104	100k	1
R 9	ERJ3GEYJ102	1k	1	R103	ERJ3GEYJ104	100k	1
R10	ERJ3GEYJ223	22k	1	R104	ERJ3GEYJ472	4.7k	1
R11	ERJ3GEYJ393	39k	1	R105	ERJ3GEYJ683	68k	1
R12	ERJ3GEYJ562	5.6k	1	R111	ERJ3GEYJ222	2.2k	1
R13	ERJ3GEYJ273	27k	1	R112	ERJ3GEYJ103	10k	1
R14	ERJ3GEYJ823	82k	1	R113	ERJ3GEYJ151	150	1
R15	ERJ3GEYJ563	56k	1	R114	ERJ3GEYJ151	150	1
R16	ERJ3GEYJ224	220k	1	R200	ERJ3GEYJ394	390k	1
R17	ERJ3GEYJ104	100k	1	R201	ERJ3GEYJ474	470k	1
R18	ERJ3GEYJ223	22k	1	R300	ERJ3GEYJ103	10k	1
R19	ERJ3GEYJ152	1.5k	1	R301	ERJ3GEYJ474	470k	1
R20	ERJ3GEYJ124	120k	1	R302	ERJ3GEYJ103	10k	1
R23	ERJ3GEYJ561	560	1	R303	ERJ3GEYJ182	1.8k	1
R24	ERJ3GEYJ472	4.7k	1	J10	ERJ3GEY0R00	0Ω	1
R25	ERJ3GEYJ273	27k	1				
R27	ERJ3GEYJ124	120k	1				
R28	ERJ3GEYJ683	68k	1				
R29	ERJ3GEYJ223	22k	1				
R30	ERJ3GEYJ103	10k	1				
R31	ERJ3GEYJ152	1.5k	1				
R32	ERJ3GEYJ224	220k	1				
R33	ERJ3GEYJ103	10k	1				
R34	ERJ3GEYJ104	100k	1				
R35	ERJ3GEYJ393	39k	1				
R36	ERJ3GEYJ222	2.2k	1				
R38	ERJ3GEYJ103	10k	1				
R39	ERJ3GEYJ564	560k	1				
R40	ERJ3GEYJ274	270k	1				
R41	ERJ3GEYJ103	10k	1				
						(CAPACITORS)	
				C 1	ECUV1H103KBV	0.01	S 1
				C 2	ECUV1E104ZEV	0.1	S 1
				C 3	ECUV1H220JCV	22p	1
				C 5	ECUV1H121JCV	120p	1
				C 6	ECUV1H101JCV	100p	1
				C 7	ECUV1H103KBV	0.01	S 1
				C 8	ECUV1H103KBV	0.01	S 1
				C 9	ECUV1H010CCV	1p	1
				C10	ECUV1H220JCV	22p	1
				C11	ECUV1H103KBV	0.01	S 1
				C12	ECUV1H470JCV	47p	1
				C13	ECUV1H680JCV	68p	1
				C14	PQCUV1H330JC	33p	1
				C15	ECUV1H150JCV	15p	1
				C16	PQCUV1H150JR	15p	1
				C17	ECUV1H3R0BCV	3p	1
				C18	ECUV1H102KBV	0.001	1

Ref. No.	Part No.	Value	Pcs/Set
C19	ECUV1H223KBV	0.022	S 1
C20	ECUV1H122KBV	0.0012	S 1
C23	ECUV1H120JCV	12p	1
C24	ECEA1AKS330	33	S 1
C25	ECUV1H150JCV	15p	1
C26	ECUV1C104KBV	0.1	1
C27	ECEA1CKS100	10	1
C30	ECUV1C104KBV	0.1	1
C31	ECEA1CKS100	10	1
C32	ECEA1HKS2R2	2.2	1
C33	ECUV1H223KBV	0.022	S 1
C36	ECEA1CKS100	10	1
C37	ECUV1H473MDV	0.047	S 1
C38	ECUV1H103KBV	0.01	1
C39	ECUV1H103KBV	0.01	1
C40	ECUV1H472KBV	0.0047	S 1
C41	PQCUV1C105ZF	1	1
C42	ECUV1H103KBV	0.01	1
C43	ECUV1H390JCV	39p	1
C45	ECEA1CKS100	10	1
C46	PQCUV1C224ZF	0.22	1
C47	PQCUV1C474ZF	0.47	1
C48	PQCUV1E104MD	0.1	S 1
C49	ECUV1H562KBV	0.0056	1
C52	ECEA0JKS470	47	1
C55	ECUV1H103KBV	0.01	1
C57	ECEA0JKS470	47	1
C58	ECUV1H103KBV	0.01	S 1
C59	ECUV1H103KBV	0.01	S 1
C60	ECUV1C104KBV	0.1	1
C61	ECEA0JKS470	47	1
C62	ECUV1C104KBV	0.1	1
C64	PQCUV1C105ZF	1	1
C65	ECUV1E104ZFY	0.1	S 1
C66	PQCUV1E104MD	0.1	S 1
C70	ECUV1C104KBV	0.1	1
C71	ECUV1H220JCV	22p	1
C72	ECUV1H220JCV	22p	1
C73	ECUV1H270JCV	27p	1
C74	ECUV1H270JCV	27p	1
C75	ECUV1H103KBV	0.01	S 1
C76	ECUV1E104ZFY	0.1	S 1
C80	ECEA0GKS221	220	1
C81	ECUV1E104ZFY	0.1	S 1
C84	ECUV1H103KBV	0.01	S 1
C85	ECUV1H103KBV	0.01	S 1
C90	ECUV1H103KBV	0.01	S 1
C91	ECUV1H103KBV	0.01	S 1
C95	ECUV1H103KBV	0.01	S 1
C200	ECUV1C104KBV	0.1	1
C301	ECUV1C123KBV	0.012	1
C302	ECUV1H102KBV	0.001	1
C303	ECUV1C104KBV	0.1	1
R22	ECUV1H390JCV	39p	1

KX-TC419BX			
Ref. No.	Part No.	Part Name & Description	Pcs/Set
ACCESSORIES AND PACKING MATERIALS			
A1	PQJA59V	TELEPHONE CORD	1
A2	KX-A09BMX-2	AC ADAPTOR	△ 1
A3	PQOX11701Z	INSTRUCTION BOOK	1
A4	PQQT11156Y	MEMORY STICKER	1
A5	PQKL24Z0	STAND	S 1
	PQQW11712Z	QUICK REFERENCE GUIDE	1
P1	PQPH89Y	PROTECTION COVER (for Base Unit)	1
P2	XZB15X25A01	PROTECTION COVER (for Accessories)	1
P3	XZB11X40A02	PROTECTION COVER (for Portable Handset)	1
P4	PQPK12247Z	GIFT BOX	1
P5	PQPN10575Z	CUSHION	1
P6	PQPN10576Z	CUSHION	1
FIXTURE AND TOOL			
Z1	PQZZ14K8Z	EXTENSION CORD, 14 PIN	1
<b>Note:</b> 1. PQZZ14K8Z is useful for servicing. (They make servicing easy.)			

KX-A91X			
Ref. No.	Part No.	Part Name & Description	Pcs/Set
ACCESSORIES			
A100	PQJC319Z	BATTERY TERMINAL	1
A101	PQJC714Z	BATTERY TERMINAL	2
A102	PQJC712Z	BATTERY TERMINAL	1
A103	PQQT10784Y	CAUTION LABEL	1
A104	PQYMA91X	UPPER CABINET	1
A105	PQHE501Z	SCREW	1
A106	PQUS198Z	SPRING	1
A107	PQKK10023Z2	BATTERY COVER	1
A108	PQJC713Z	BATTERY TERMINAL	2
A109	XUC2FY	E RING	1
A110	PQWPA91X	P.C.BOARD ASS'Y (RTL)	1
A111	PQJJ1B4Y	DC IN JACK	△ 1
A112	PQJA10021Z	DC CORD	△ 1
A113	PQKF10068V2	LOWER CABINET	1
A114	XTW3+S14P	SCREW	4
A115	PQGT12689Z	NAME PLATE	1
A116	PQQT11362Z	ADAPTOR LABEL	1
D6	PQVDHRP22	DIODE (SI)	1
D7	PQVDHRP22	DIODE (SI)	1
	XZB18X27A04	PROTECTION COVER	1

■ CABINET AND ELECTRICAL PARTS LOCATION (KX-T4046ALH) [Change from original page 58]



(Model KX-TC419BX)

■ CABINET AND ELECTRICAL PARTS LOCATION (KX-T4046ALR) [Change from original page 59]



(Model KX-TC419BX)